



QUALITY HOMES: A HOMEOWNER'S GUIDE



BCA QUALITY MARK

Building and Construction Authority



We shape a **safe**, **high quality**, **sustainable** and **friendly** built environment.

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Readers should seek professional advice if they need to assess the workmanship quality of their homes and/or determine specific legal rights and duties applicable to them.

Readers should conduct independent verification to determine if a residential project has been assessed under BCA's quality assurance schemes.

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INTRODUCTION

Buying a home for most people often represents a huge investment decision. To many, a home is a prized possession requiring significant financial commitment over a long period of time. For some, it may mean paying off the mortgages over their lifetime. With homeowners paying soaring prices for their dream properties, it is not unreasonable to expect good quality homes to commensurate with the high prices that they are paying for.

However, a new homeowner may not know what constitutes good quality in a home. He may not know what to look out for when he makes a purchase or when taking delivery of the unit upon handover. Often, he has to rely on his own limited knowledge, family members, friends or people in the construction industry to ascertain the standards. The advice he gets sometimes can be conflicting leaving him confused and non wiser.

To bridge this gap, this Guide aims to educate homeowners on the workmanship quality standards used in CONQUAS®, BCA's Construction Quality Assessment System for assessing workmanship quality. It covers workmanship standards in architectural finishes like walls, floors and ceilings, mechanical and electrical fittings (M & E) and components like wardrobes, kitchens and cabinets found in a home. The CONQUAS® standards can serve as a useful reference to assess whether an item would be accepted if it was assessed under CONQUAS®. Issues relating to quality or durability of materials used, aesthetics preferences or adequacy of design are not covered in this Guide.

It should be noted that CONQUAS® standards though widely used in Singapore (since 1989) are not mandated. Developers may specify or use other standards to assess or benchmark the quality of their projects. Where such alternative standards are specified, they should be adhered to. The illustrations published in this Guide are extracted from the Building and Construction Authority's (BCA) Good Industry Practice Guides - a series of guides on best industry practices produced in consultation with the industry. Readers should note that the illustrations in this Guide are for information only and should not be used for legal redress.

This Guide also shares with readers some materials and designs which inherently contribute to high quality workmanship and at the same time raise productivity in the construction process. Homeowners may want to take note of these materials and designs when buying homes with such specifications as they generally result in better built quality homes.

Apart from illustrating the quality standards, this Guide also introduces readers to 2 quality assurance schemes made available by BCA to the industry viz. the Quality Mark for Good Workmanship Scheme (QM) and CONQUAS®. The QM scheme may be of

interest to homebuyers as any unit with the QM mark is an assurance of the high workmanship standard that the unit had achieved after undergoing stringent quality checks and met the minimum specified standards.

Finally, in the event where there is a dispute on quality or defects, a chapter has been devoted in this Guide to assist the homebuyer through the process of resolving such disputes with the developer. The Guide outlines the various avenues available to resolve the dispute and the agencies that may be able to provide assistance.

PART 1A

INTERNAL FINISHES

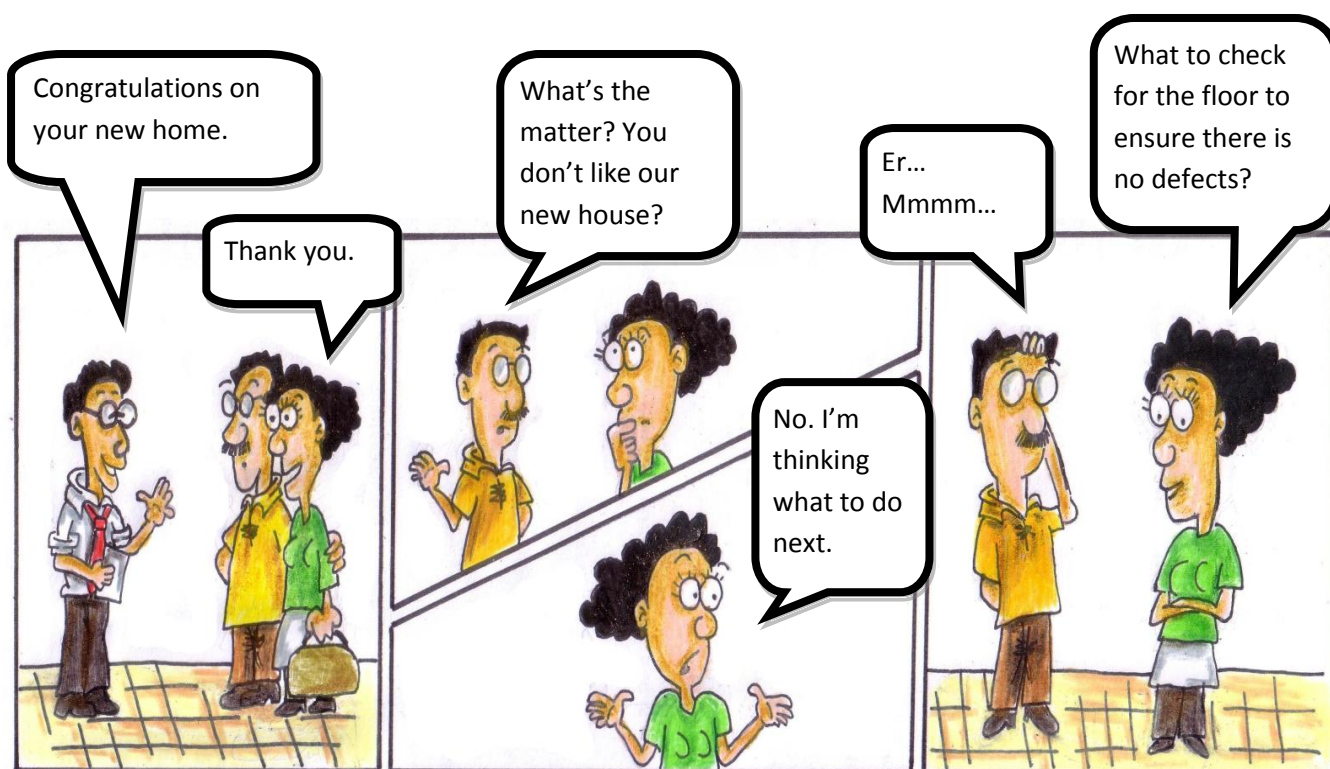
WHAT IS ACCEPTABLE?



PART IA: INTERNAL FINISHES - WHAT IS ACCEPTABLE?

This part highlights the workmanship standards used by BCA when assessing projects under the Quality Mark (QM) for Good Workmanship Scheme (see Part II). It is based on the standards in CONQUAS® (Construction Quality Assessment System). The examples given here may therefore not be applicable if some other standards have been specified instead. As it is not possible to achieve a defect-free construction in most instances, some defects, if they are minor and not extensive, are allowable under the QM scheme.

A) FLOOR

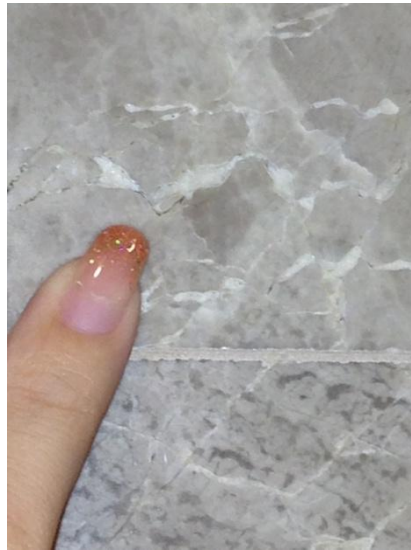


This section will cover the typical defects observed during the assessment of the floor. The material used for the floor can be natural stones like marble or granite, ceramic tiles or timber. The skirting (extension of the floor finish on the wall) is considered part of the floor during the assessment.

- i) Inherent characteristics like open veins, tone variations and pinholes are common in natural stones. These inherent characteristics are sometimes classified as "defects" by end users. The inherent characteristics can be rectified and the floor should feel smooth. The tonality of touch-up done to the flooring should be properly carried out to ensure that it matches the colour of the original stone.



Closed vein is smooth and cannot be felt



After rectification, the floor should be smooth.

- ii) From a distance of about 1.5 metres, the flooring of any unit must be of consistent colour tone throughout subject to the inherent characteristics as stated in part i) above. This applies to ceramic, marble, granite finishes as well as timber flooring.



Consistent tonality (patterns and shades blend)

Inconsistent tonality



Consistent tonality

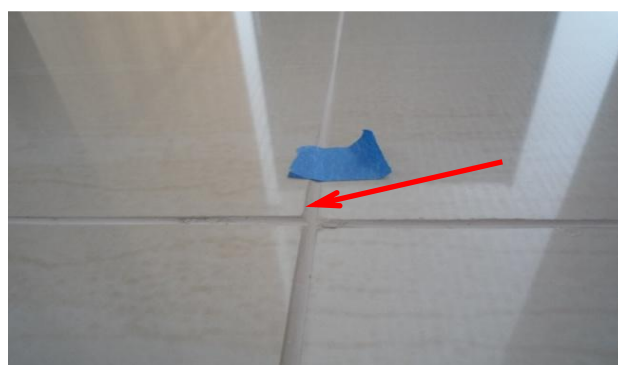


Inconsistent tonality

iii) The unevenness between adjacent tiles or stones should not be more than 0.5mm and with no sharp edges detected for ceramic, marble and granite finishes. For timber flooring, there should be no uneven level between adjacent strips while walking barefoot. A difference of 3mm is acceptable for a length of 1.2 metres.



Uneven timber flooring



Uneven tiles with sharp edge



Chip -offs on marble



Poor touch-up on chip-off

iv) From a distance of about 1.5 metres, there should be no visible cracks, chip-offs or scratch marks on ceramic, marble and granite finishes and timber flooring. If the defect is rectified and touched up, the touch up should match closely to the existing material's colour.

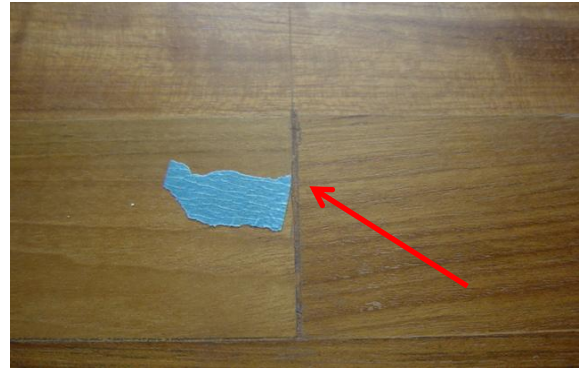


Indentations on timber

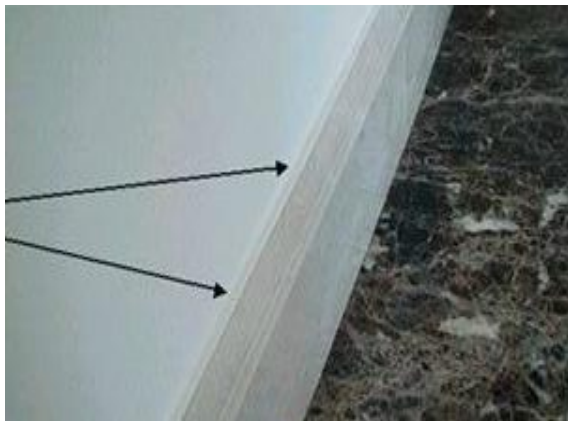


Poor touch-up on nail marks

v) For ceramic, marble and granite finishes, the joints between tiles should be visibly straight and consistent. The cement grout between ceramic tiles should be of consistent colour. The timber strip should butt against each other with no visible gaps at the joints. There should be no visible gaps between skirting and wall as well as the skirting and the floor.



Inconsistent joints



Good consistent joint between wall and skirting

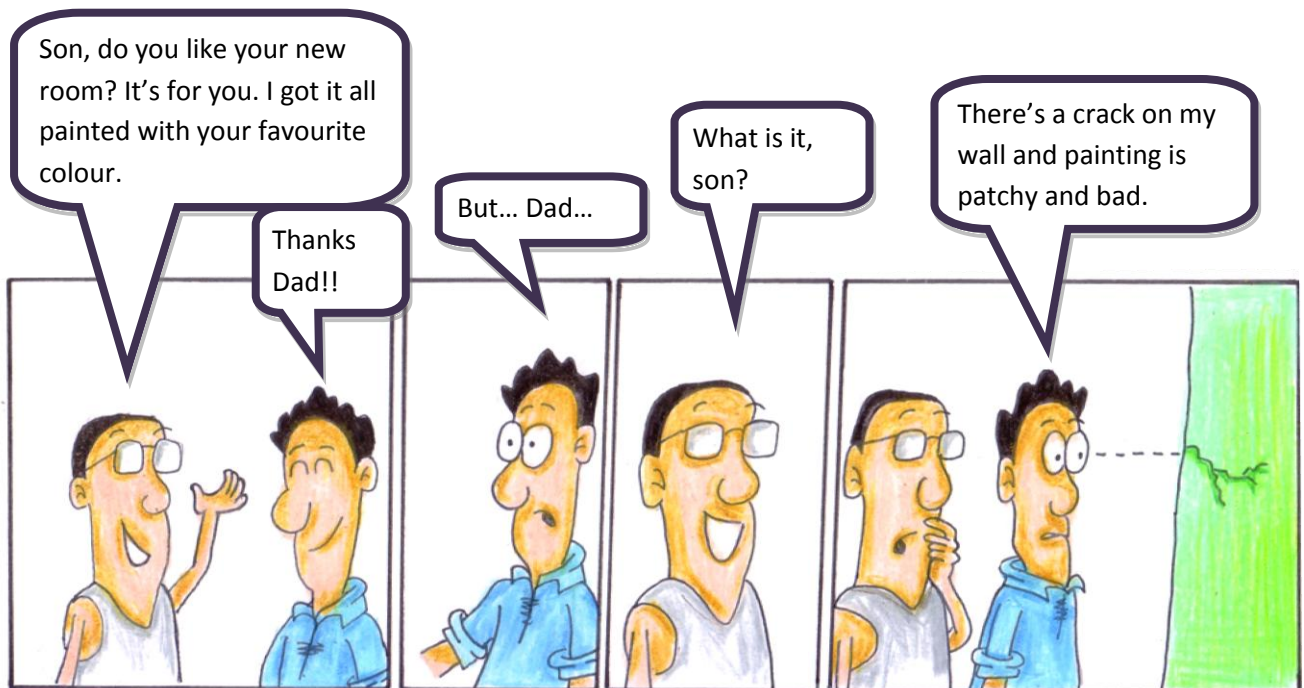


Inconsistent joints



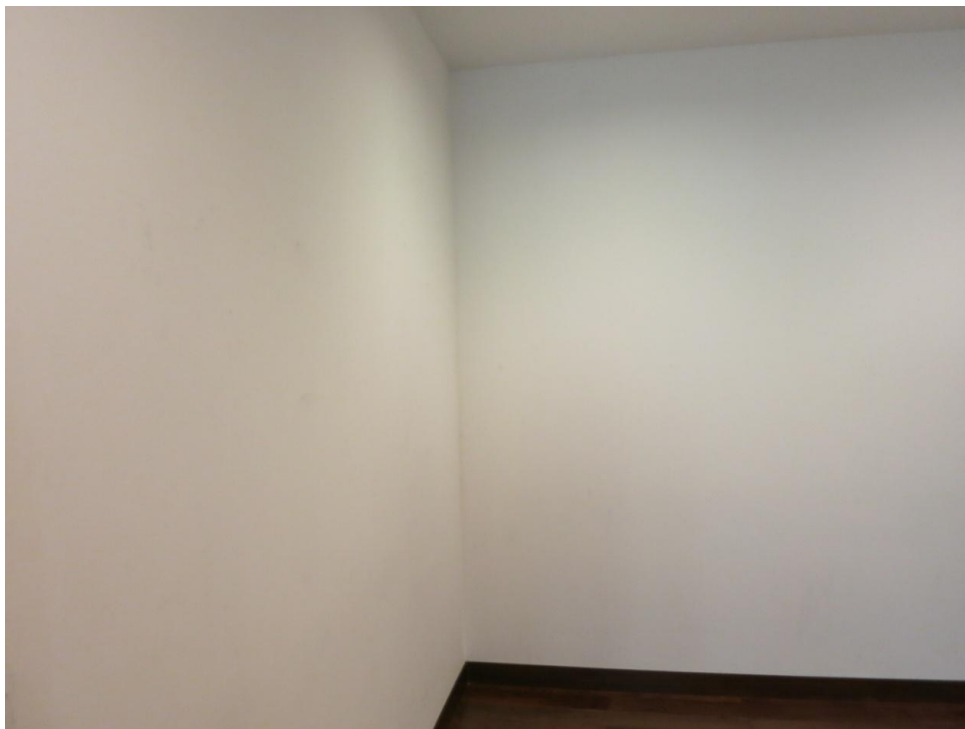
Gap at skirting joint

B) WALL



This section will cover the typical defects observed during the assessment of the internal walls. The surface of a wall can be painted or tiled with natural stones or ceramic tiles.

- i) From a distance of about 1.5 metres, the surface of the wall should be smooth and free of brush marks. There should be no dampness and patchiness. For tiled wall, the surface should be of consistent tonality.



Smooth and free of brush marks

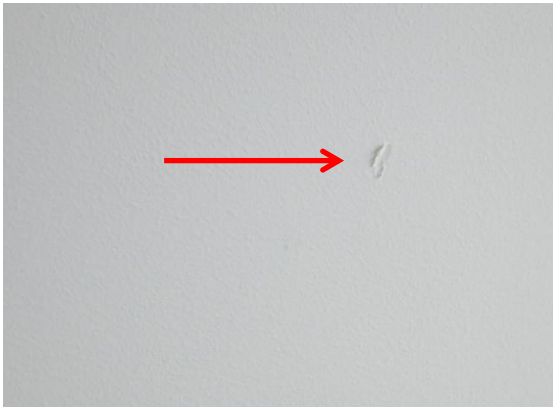


Inconsistent tonality
on marble wall

Brush mark patchiness



- ii) From a distance of about 1.5 metres, the surface of the wall should be free of cracks, peel-offs, chip-offs, blisters and pin-holes



Chip-off on wall surface

Poor painting on wall surface



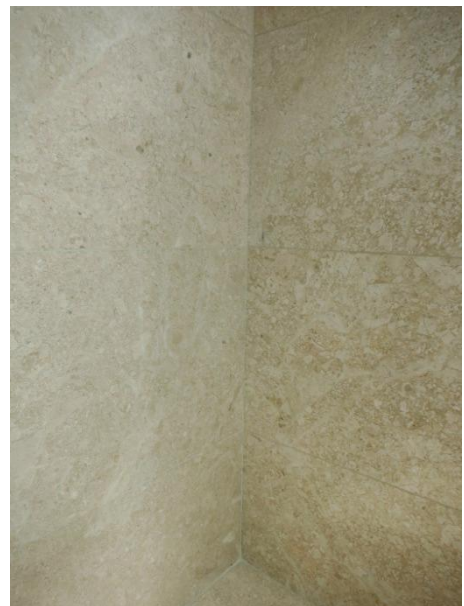


Crack on wall

iii) Wall edge lines or corners (internal and external) are to be straight and consistent. For tiled wall, the joints are to be straight and consistent.

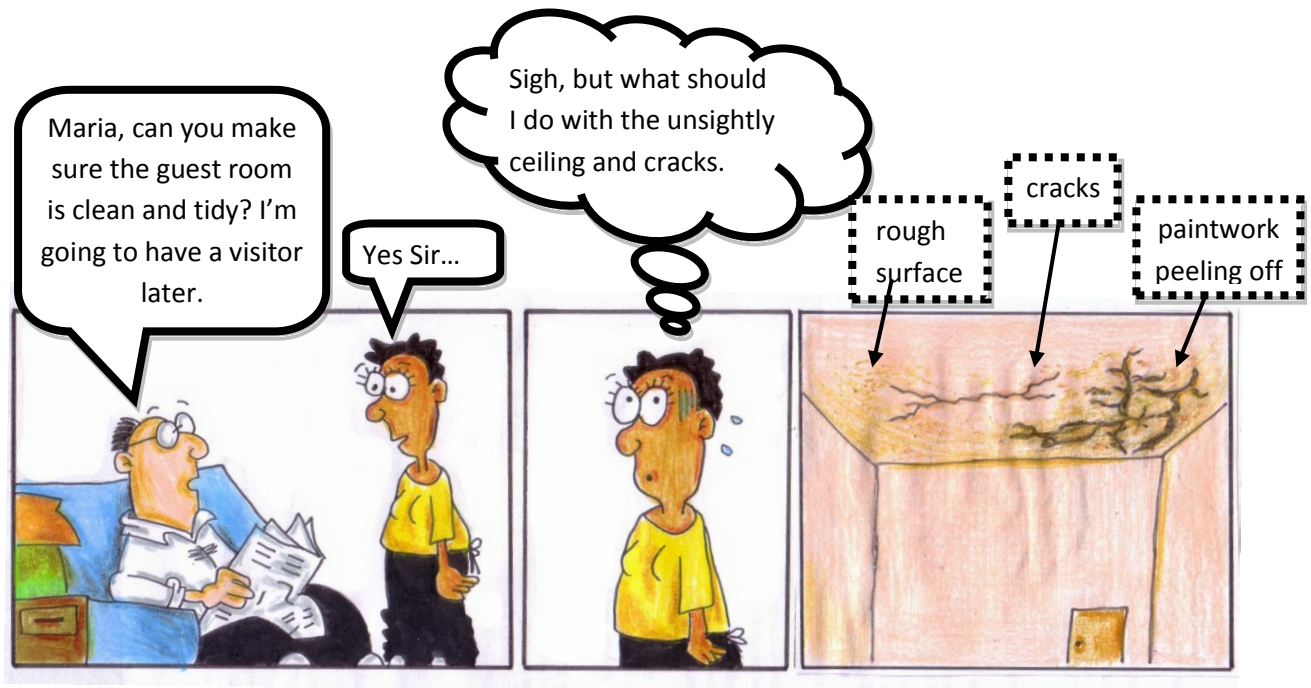


Straight and consistent wall joints in room



Straight and consistent wall joints in bath

C) CEILING



This section will cover the typical defects observed during the assessment of the ceiling. The surface of the ceiling should be painted and plastered smooth.

- i) The surface of the ceiling should be smooth and free of brush marks as well as be even and not wavy. There should be no dampness and patchiness. The colour must be uniform and consistent.



Smooth and consistent ceiling surface



Smooth and consistent ceiling surface

- ii) Surface of the ceiling should be free of cracks, peel-offs, chip-offs, blisters and pin-holes

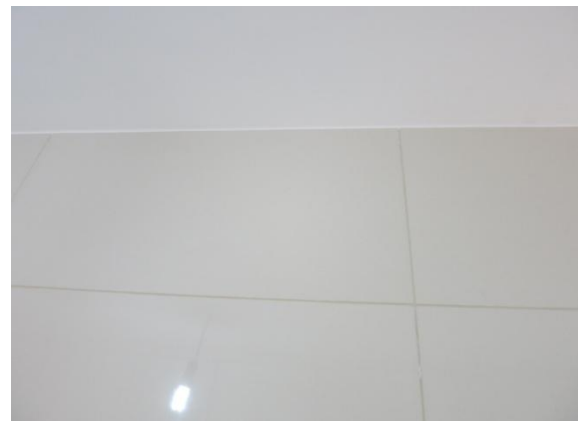


Peel-offs and chip-offs on ceiling

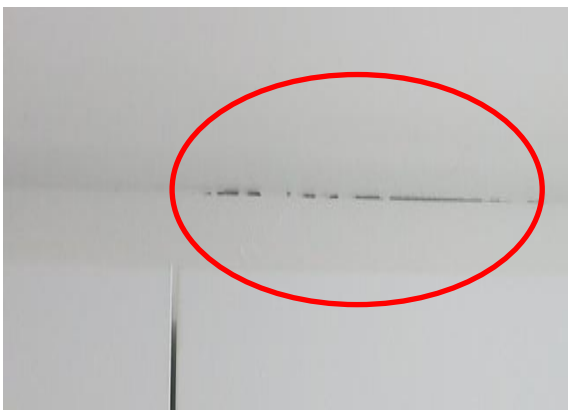
- iii) The ceiling to wall edge lines/joints are to be straight and consistent.



Straight and consistent ceiling to wall edge joint in the room

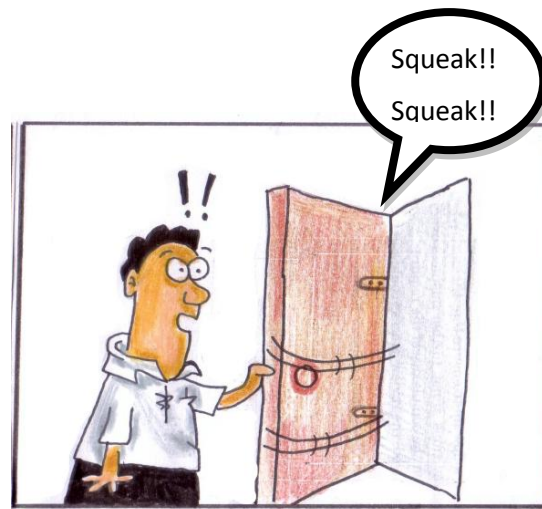


Straight and consistent ceiling to wall edge joint in the toilet



Poor ceiling to wall edge joint

D) Door



This section will cover the typical defects observed during the assessment of doors. Front and room doors are typically made of solid timber, veneer, or laminate while the balcony doors are made of aluminium and toilet and bath doors are made of PVC.

i) The joints of door frame to floor and wall should be neat, gap-free and consistent. When closed, the gap between the door and frame as well as door and floor should be consistent. The mitre (a joint made by two bevelled surfaces to be joined, usually at a 45° angle, to form a corner) joints of the door frame should be neat and consistent. For glass door, the sealant should be applied uniformly and neatly with no spread on glazing or frame.



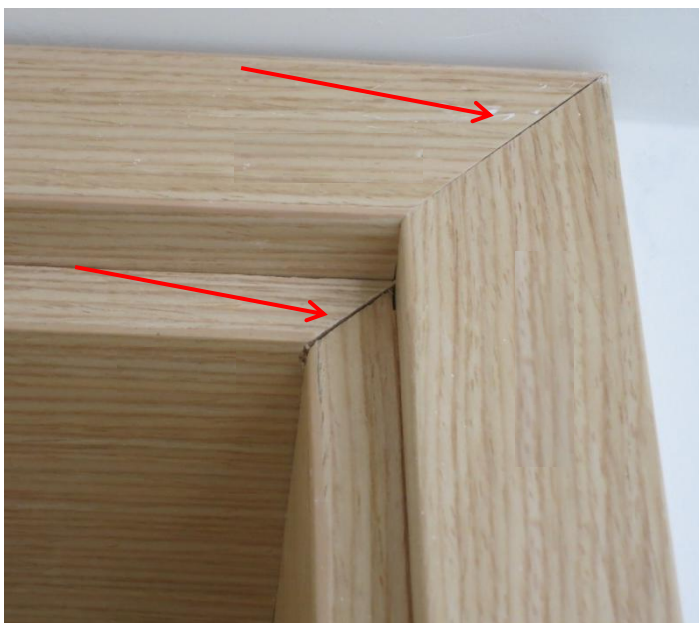
Good and consistent joint of door frame and wall



Good and consistent joint between door frame and ceiling



Good and consistent joint between door and wall



Poor mitre joint of door frame

- ii) Door and frame should be aligned when closed. The door leaf and frame should not be bent or warped.



Door leaf and frame flushed and aligned

Door leaf and frame misaligned



- iii) There should be no visible damages like cracks, dents, scratch marks. The painting and varnishing on the door must be uniform and consistent. No excessive brush marks on painted door.



Damage on the door

Damage on the side of the door



iv) The lock, knob/handle, latch, door stopper, door closer, hinges and screws are well fitted and free from rust and stain. The lock, knob/handle, latch, door stopper, door closer are free from scratch marks. The gasket for glass door should not be damaged or loose.



Door handle free from rust and stain

Door hinge free from rust and stain, screws are flushed and well-fitted



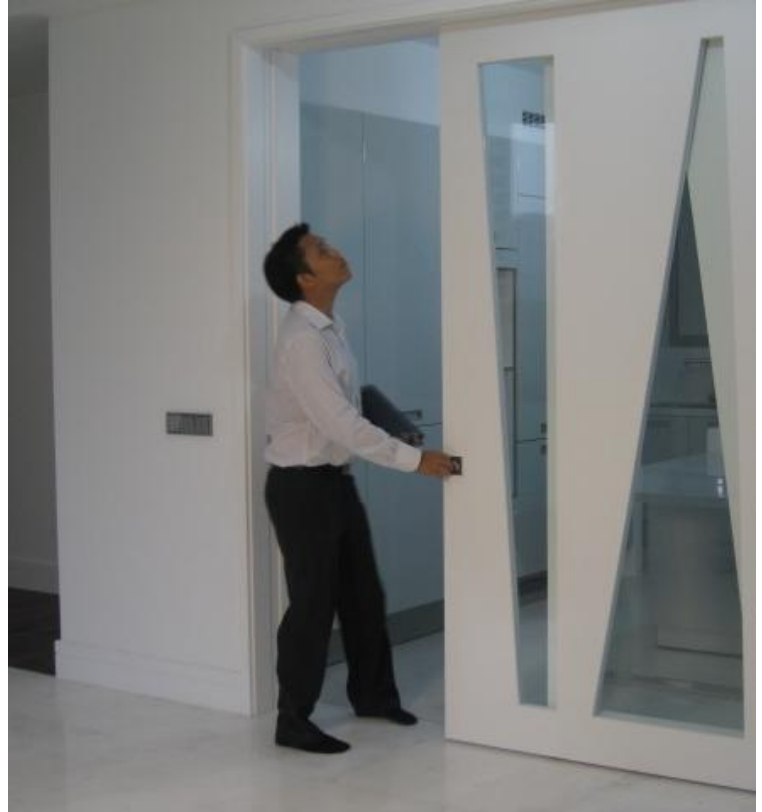
Shower door handle free from rust



Shower door hinge free from rust and stain, screws are flushed and well-fitted

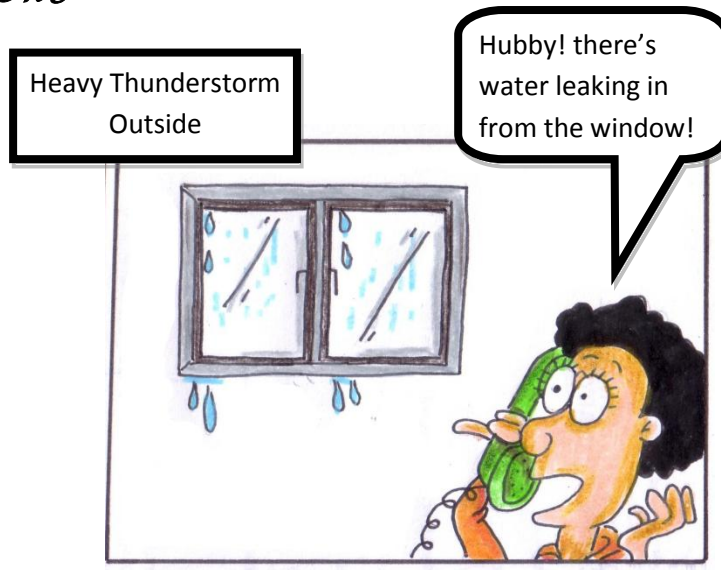
- v) The lock, knob/handle, latch, door stopper, door closer should operate smoothly and easily. There should be no squeaking sound. For swing or sliding doors, the door should open and close or slide along the track smoothly.

Sliding door open,
close or slide smoothly



Balcony sliding door should
close or slide smoothly, door
frame should be aligned, no
damages on the glass panel

E) WINDOWS



This section will cover the typical defects observed during the assessment of the window. The windows are typically made of aluminium and powder coated or anodised aluminium.

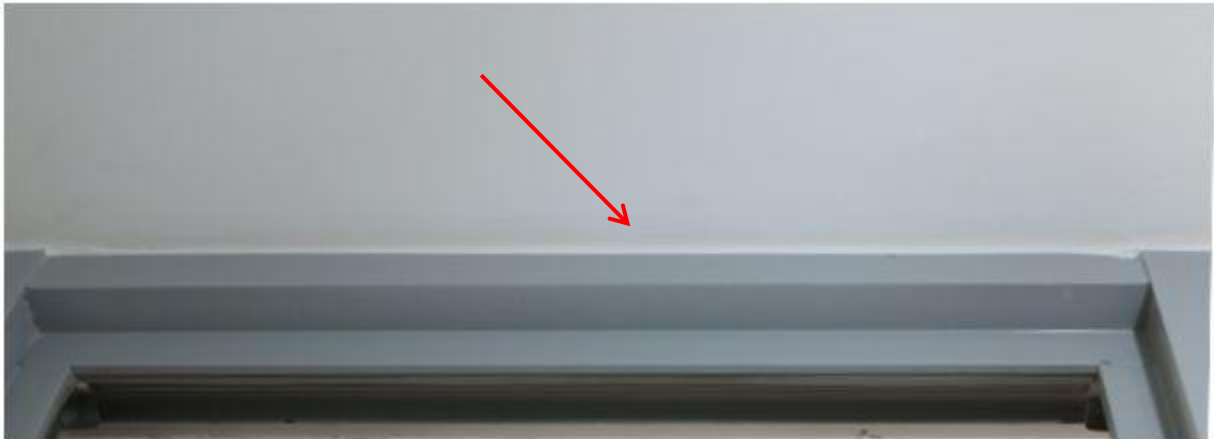
- i) Joints of window frame and wall should be neat, gap-free and consistent. When in closed position, the window and frame should have no gaps. The sealant should be applied uniformly and neatly with no spread on glazing or frame.



Neat and consistent window frame to joints

Window frame level and aligned





Neat and consistent window frame to ceiling joints



Sealant not properly applied

ii) Window and frame should be aligned when in closed position. The window and frame should not be bent or warped.

Window flushed and aligned when closed



- iii) There should be no visible damage like cracks, dents, scratch marks on the window and frame.

Dent on the window frame



Dent on the window frame

Scratch mark on window frame



Dent on the window frame

- iv) Lock, knob/handle, latch, hinges and screws should be well-fitted and free from rust and stain. The lock, knob/handle, latch, door stopper, door closer should be free from scratch marks and damage. The gasket should not be damaged or loose.



Window handle are well-fitted, aligned and free from damage

Gasket is neat and properly sealed



- v) Lock, knob/handle, latch should operate smoothly and easily. There should be no squeaking sound. For casement or sliding windows, the window panel should open and close or slide along the track smoothly.

Latch operating smoothly



- vi) There should be no signs of water leakage.



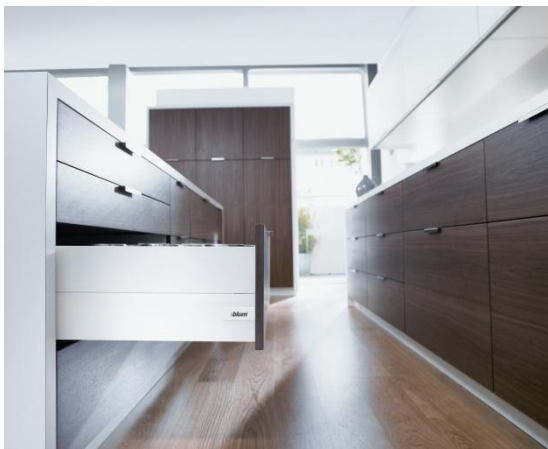
Water leakage during window water tightness test

F) COMPONENTS

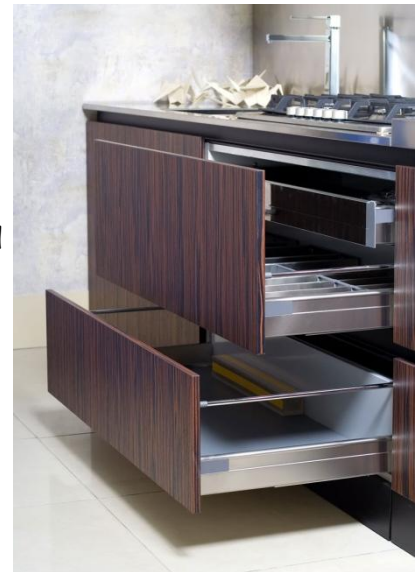


This section will cover the typical defects observed during the assessment of components in a unit. Components consists of built-in wardrobes, walk-in wardrobes, shoeracks, kitchen cabinets, kitchen sink, bath cabinets, toilet bowl, shower screen, vanity top and basin, mirror, toilet paper holder, towel rack, soap tray, bath tub, staircase railing, and metal railing.

- i) Wardrobe and cabinet doors and drawers should open and close smoothly.



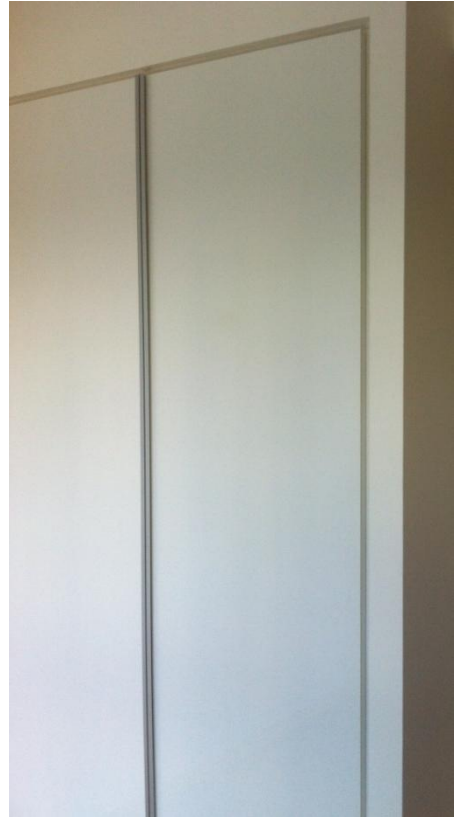
Drawer open and close smoothly



Cabinet doors open and close smoothly

- ii) When in closed position, all drawers and doors should be flushed and aligned.

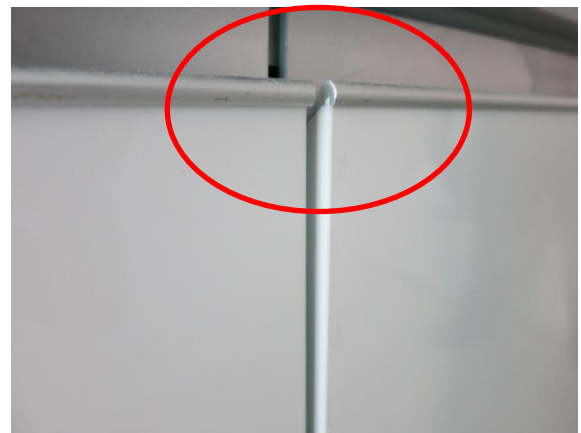
Wardrobe door
flushed and aligned



Cabinet doors
flushed and aligned



Bath cabinet door not aligned



Kitchen cabinet door not aligned

- iii) There should be no visible damages like cracks, dents, scratch marks and chip-offs as well as stains.



Chip-offs and bad touch-up at wardrobe



Nail mark not touched -up

- iv) Handles, locks and knobs should be rigidly fixed and aligned. There should be no stain, paint chip-off, or rust on them.

Wardrobe handles are level and aligned, free from stain

Wardrobe handles are level and aligned, free from stain



- v) Joints of cabinet and wardrobe to wall and floor should be neat, with no visible gap and consistent. The joints for bath tub, vanity top, wash basin and toilet bowl to wall or floor should be neat, with no visible gap and consistent

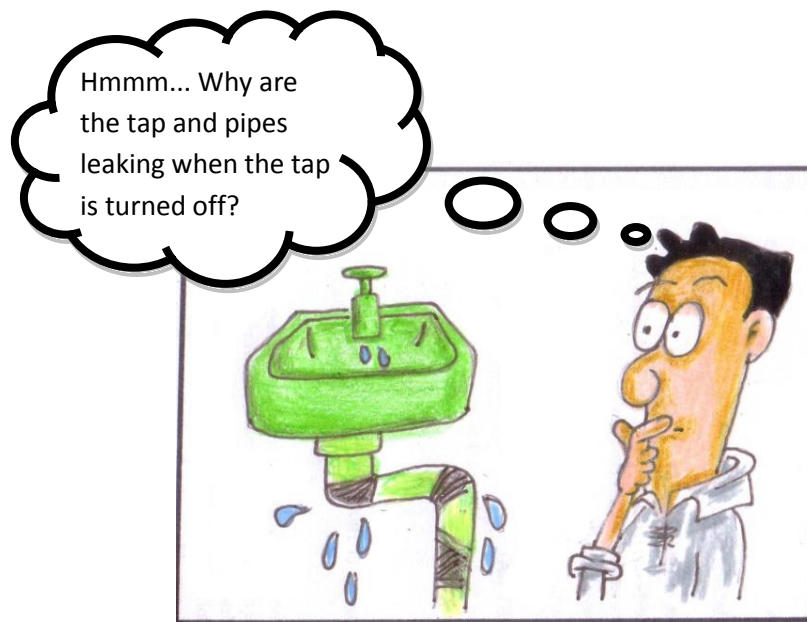


Joint between toilet bowl and wall is neat and consistent



Joint between vanity top and tiled wall is neat and consistent

G) M & E FITTINGS



This section will cover the typical defects observed during the assessment of the M & E (mechanical and electrical) fittings. M & E fittings consists of floor trap, water tap, pipes, electrical trunking, power point, switches, telephone point, distribution board, air-conditioning diffuser, air-conditioning fan coil unit.

- i) Floor trap grating should rest firmly and flush with the floor. Floor trap should be aligned to the floor tile. Wall mounted fan coil unit of the air-conditioner should be aligned and levelled. Electrical switches should be level.



Switches are level



Floor trap flushed to the floor



Wall mounted Fan Coil Unit of the Air-conditioner is aligned and level

- ii) There should be no leakages in the pipes and pipe joints. There should also be no signs of seepage from the floor or wall. For the air-conditioner, there should be no condensation on the body or any signs of water leakage on the wall or ceiling mounted fan coil units.



No leakage at pipe joints, and pipe to wall penetration is neat and consistent

- iii) Electrical switches should be easily operable. Cistern should flush properly. Water taps should close tightly and no water should drip when the tap is turned off.

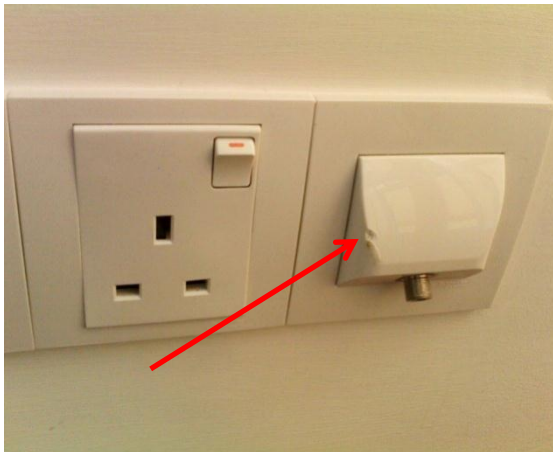


No water drip from closed tap

iv) All metallic accessories and screws should be free from rust and stain. The wall or ceiling mounted fan coil units of the air-conditioner should be free from surface damages, stain, cracks and scratch marks. The electrical switches should be free from surface damages, stain, cracks and scratch marks.



Stain on floor trap



Dent on internet
access point

v) There should be no gaps between the wall and switches and power sockets. The joints should be neat and consistent. However, there are designs with the face plates have floating design where the gaps are not be sealed.



Gap between
wall and switch



Joint not consistent



PART IB

ENGINEERED MATERIALS AND DESIGNS



PART IB: ENGINEERED MATERIALS AND DESIGNS

This part highlights some engineered materials and designs used in residential developments which often lead to higher quality and productivity compared to traditional methods and materials. The adoption of these materials and designs has helped developers deliver high quality homes within a shorter span of time. Homeowners may wish to take note of such materials or designs when investing in such units.

A) Drywall

There is a growing trend in Singapore where internal drywall partitions are used in substitution for brickwork and plastering. Most drywall partitions are produced from recycled materials available from many sources and uses low energy in the production process. It is therefore environmentally friendly and contributes to sustainable construction. Some brands of drywall partitions are certified as green building material.

The drywall system is able to resist high impact forces and it can support loads such as TV, cabinets, shelves, etc. attached to it. Drywall systems are faster to erect in contrast to traditional construction methods such as brick and block work. The productivity rate is 3 to 4 times higher compared to brickwork. The partitioning works can be completed faster with better quality.

Rough surfaces and inconsistent paint finishes are the most frequent non-compliances in plastered walls. The smoothness, consistency and texture in paint work are very much dependent on the substrate i.e. plastered surface. If the substrate is smooth and not wavy, it will be easier to achieve good paint work either by roller or spray method. In contrast, drywalls have an even board surface and only the drywall joints are required to be applied with putty and sanded before painting.



Proper anchorage system facilitates mounting of TV, shelves and cabinets on drywall partitions.

B) Prefabricated Bathroom Unit

Prefabrication technology is not new to the construction industry and has been in use for many years. Prefabrication permits components to be assembled in the factory under strict quality control before its installation on site. A prefabricated bathroom integrates many trades in its construction and can be built to achieve consistent and high quality workmanship.

In the conventional method of toilet construction, many trades include concreting, brickwork, waterproofing, screeding, tiling, plumbing, electrical works, components, etc have to be properly sequenced and coordinated on site to avoid delays. There is greater difficulty in achieving build quality as the work of some trades may be damaged by others in the process. The multiplicity of trades also creates uncertainties on the project duration. With prefabrication, the quality of the finished product can be better assured with greater consistency.



Picture of Prefabricated Bath Units



Sanitary fitting and accessories are factory fitted to achieve quality internal finish

C) Agglomerated Marble (Compressed Marble)

Agglomerated marble is made of the same material and the whole body is homogeneous. Gentle grinding and polishing after installation make the floor surface smooth and shiny. This same quality finish can still be achieved years after installation by re-grinding and re-polishing. Agglomerated marble is slightly harder than natural marble. Tone variations in the same batch of production are minimised by the addition of resin and inorganic pigments.



Tonality consistency is a key feature in agglomerated marble finish

Inherent imperfections like open veins, tone variations and pinholes are common in natural stones. These imperfections are sometimes classified as "defects" by end users. The defects can be rectified and it should not be felt by the finger (same as per part 8(i)). Much time and cost need to be expended to address such "imperfections", apart from the inconvenience to end users. For this reason, dry laying is often necessary in natural stone works to reduce or minimise such imperfections.

However, a well-controlled mechanism in the manufacturing process for agglomerated marble using compressed vacuum technology will reduce concerns like pin holes and open veins in flooring. Agglomerated marble requires less effort to install as no dry lay is required as compared to natural stones like marble or granite. Batch control is required to avoid the tonality problem.



Difficult to address inherent flaws in natural stones, especially after installation

Agglomerated marble can react with acids and alkalis. Thus it is advisable to apply compatible impregnator to prevent or minimize stain ingress and other reactions. Also, it should be cleaned only with pH neutral detergents. Some other tips to maintain the original surface finish are:

- Remove stain immediately
- Avoid using cleaning agents containing soluble salts like sulphate or chloride
- Use neutral cleaner or plain water for regular maintenance

D) Engineered Hardwood Floor

Engineered wood constitutes of multiple layers of veneer and lumber boned together with an adhesive. The top layer is genuine hardwood and the engineered components underneath make the flooring more stable. The flooring is available in many wood types and colours and generally comes with prefinished form.

Engineered hardwood flooring is dimensionally stable as it could withstand twisting to a certain extent as it is constructed using multiple ply planks. In addition to the top layer of hardwood, engineered wood flooring typically has a few more core layers at the bottom. The core layers may be plywood, high density fiberboard or others. The layers are placed to alternating the lengthwise and crosswise grain so the strip can be dimensionally stable.



The controlled factory environment provides a uniform coating on the surface

The controlled factory environment provides a uniform coating on the surface



With engineered hardwood flooring, the following quality issues in timber flooring can be minimised

- Open joints

The most frequent issue posed by timber floors in the tropics is open joints. The predominant cause is that wood is sensitive to variation in humidity and temperature and consequently susceptible to deformation. Other reasons include dimensional variation of the timber strip, unskilled installation, moisture level of the material and substrate, etc.



Open joint in timber floor

- Nail hole mark

Nail-down is required when laying timber strips to avoid movement and to secure tight joints in between the strips, especially where the installation is directly on the screed. These nails are removed only after the day of installation. Frequently, the nail holes are patched with timber putty during the first sanding and varnishing stage. It is also not uncommon that improper fillings or discoloration of filling materials affect the aesthetics of the flooring.



Nail-hole marks and patch-up often undermine the aesthetics of the flooring

- Uneven floor due to over-sanding

Poor control of sanding on a single spot by unskilled work during the grinding process is another root cause for unevenness in the timber floor surface.



Poor control in the sanding process may lead to unevenness in the finished surface

- Inconsistency due to varnishing

The uniformity of on-site varnish depends on many factors like skill level of the worker, surface condition of the floor and the surrounding environment. As a result, the quality outcome is likely to be inconsistent.



Consistency of varnishing is likely to vary in manual application

E) Composite Fibre Plastic Material

As an alternative to natural wood, composite fibre plastic material offers a practical middle ground and can be used to replace timber in some applications. Due to its inherent characteristics such as resistant to weather, moisture and termites and low maintenance, they are increasingly used widely in many applications as a substitute for natural wood.

Composite fibre plastic has many advantages:

- **Durability** - the life of composite materials is generally longer and there is reduced costly maintenance and less frequent replacement due to rotting and splintering.
- **Appearance** - the material is popular because of its uniform appearance and consistency in pattern.
- **Moisture resistant** - the plastic content in composite decking makes it less susceptible to moisture and this characteristic reduces wear and tear and prevents warping. The synthetic material also protects the surface from decay caused by prolonged exposure to weather.
- **Resistance to heating and fading** - the material is treated with UV stabilizer and hence has better resistance to heating and fading. The added preservatives and colorant keep the uniform appearance and prevent the material from fading to some extent.
- **Design flexibility** - its ability to be moulded to meet special shapes and sizes. It can be extruded to make continuous profiles of desired cross-section with better dimensional consistency and accuracy. It can also be shaped using conventional woodworking tools and colour can be applied, if desired, for aesthetic reasons.
- **Environment** - The material uses recycled plastics and can also be recycled completely and processed without any significant deterioration in performance.

- Low maintenance - They can easily be cleaned by normal sweeping, hose or water jet occasionally.

The following are the limitations with composite fibre plastic material:

- Although composite materials are manufactured with UV coatings, adverse effects of UV radiation may still affect the surface.
- The hardness of the surface is also not as good as hardwood. Thus the surfaces tend to be damaged or scratched under normal wear.
- Composite materials are not load-bearing or structural members and they are not as strong as traditional hardwood. That is why some brands of composite wood decks are still dependent on using a hardwood base to keep it structurally rigid.



The soft surface is prone to scratches and wear

PART II

QUALITY ASSURANCE SCHEMES



CONQUAS®

THE BCA CONSTRUCTION QUALITY ASSESSMENT SYSTEM

PART II: QUALITY ASSURANCE SCHEMES

There are 2 quality assurance schemes provided by BCA to the industry viz. Quality Mark for Good Workmanship Scheme (QM) and CONQUAS® (Construction Quality Assessment System). They are provided to measure and assure end-users the workmanship quality of buildings. This service is provided by BCA as third party assessors to developers or builders when they apply for their developments to be assessed under the scheme.

A) Quality Mark

QM was launched in 2002 by BCA to meet the rising expectations of homeowners for quality homes. It sets the standard for workmanship quality in homes. Since its implementation, more than 58,000 residential units/homes have been assessed or committed for assessment.

Which projects are eligible?

The QM scheme is open to all new private residential projects e.g. condominium, apartments, cluster housing, landed housing, residential units in mixed developments, etc. Participation in the scheme is voluntary.

Scope of assessment

The QM scheme measures the quality of workmanship in each newly completed residential unit. The assessment covers all internal finishes like floor, wall and ceiling finishes, architectural components and fittings like doors, windows, wardrobes, kitchen cabinets, vanity tops, bathtubs, water closets, shower screens and basins, and M & E fittings and switches. In addition, the assessment includes water ponding test for bathrooms. Water - tightness tests on windows are optional.

Assessment criteria

The assessment is based on a combination of visual assessment and measurement by tools to verify compliance to tolerances and standards set out in the CONQUAS® manual.

What are the benefits of Quality Mark?

The homeowner can generally expect better quality homes if the project is QM certified compared to non-certified homes. A QM home provides the assurance that the unit has been thoroughly assessed and meets the minimum standards of good workmanship and toilets/bathrooms water ponding requirements as specified under the scheme.

Each unit that meets the specified minimum workmanship quality standard and water ponding test requirements will be issued a Quality Mark (QM) certificate (as shown on the right). No certificate will be issued for any unit that fails to do so. The QM certificate certifies the condition of the unit at the time of inspection. The assessment does not cover quality of material, design or aesthetic preferences.

QM only assesses the workmanship of units at completion. Any patent defects will be visible and will affect the QM score. It does not cover latent defects that may appear after handover or during the defects liability period. Such defects cannot be foreseen during assessment.



What does a Quality Mark score of 80 represents?

It means that when the unit was checked for workmanship quality, 80% of the items checked met the standards as set out in CONQUAS®.

How do I know if my home or a property which I intend to purchase is a Quality Mark project?

BCA compiles and publishes a list of projects that have been assessed or committed for QM assessment at <http://www.bca.gov.sg/qm/index.aspx>. You can use the search facility to check the list of QM projects, their developers and contractors. Some project details are also available. Alternatively, you can check with the developer on whether the project has or will be committed to the QM Scheme before booking a unit in the development.

A mobile application is also available where homeowners can access similar information using their smart phones.

How do I know which developers or builders deliver high quality projects?

Any project committed to the QM scheme can be expected to meet high quality standards. However, developers and builders which consistently deliver high quality

projects are also recognised through BCA Quality Excellence Award; an annual award given out from May 2013. This information can be obtained from BCA's website at <http://www.bca.gov.sg/Professionals/IQUAS/QEA.html>

If my development was assessed under Quality Mark scheme, how do I know the Quality Mark score for my unit?

All units that have passed the minimum standard (80 points out of 100) and other requirements as specified will each be issued a QM certificate. The score will not be shown on the certificate. Under the scheme, BCA will provide to the developer/builder the detailed results of each unit that include an overall score for the unit. Depending on your purchase agreement with the developer, you may be able to obtain the score or a copy of the QM certificate for your unit.

Do I need to pay for the QM service?

As a homeowner, you do not need to pay for this service. This service is paid for by the developer or builder when they apply for the development to be assessed under the QM scheme.

Is a unit with Quality Mark defect free?

As a unit need to score only at least 80 points (out of 100) to qualify for a QM certificate, this means there may still be some defects, albeit minor, in the unit. However they are not significant enough to warrant withholding issue of the QM certificate. Major defects, e.g. leakages in the toilets/bathrooms and functionally deficient doors/windows, if any, would have been addressed before a unit is issued the QM certificate.

What happens if my unit score is below the required score for QM?

If the unit does not meet the minimum score, the developer can make good the defects and request for a re-assessment. Similarly, if the toilets/bathrooms within the unit fail the water ponding test, the developer can address the leakage and request for a re-assessment. There is no limit to the number of rescore attempts. No QM certificate will be issued until the unit achieves the minimum score and meets the requirements of the water ponding test.

Does Quality Mark cover design and materials specification?

QM is primarily based on the quality of workmanship achieved. It does not cover design and materials specification. For example, it does not assess any design inadequacies like fitness for purpose, poor ventilation, etc or whether the materials used are in accordance to the specifications or if the right material has been specified. Homeowners will need

to check that the materials specified meet their expectations and that what is installed is in accordance to the specifications in the Sale & Purchase Agreement.

Can I engage BCA to establish a defects list for my property based on Quality Mark assessment?

The Quality Mark assessment is devised to provide a score for an individual unit based on CONQUAS® standards. If there is an issue on quality or defects in the property, this should be taken up directly with the developer in accordance with the terms in the Sale & Purchase Agreement. If need be, homeowners may engage building surveyors or other professionals for advice.

Who are the assessors?

The assessors are trained specialists from the Building and Construction Authority. They act as independent third party assessors to carry out the assessment work.

Does BCA provide Quality Mark assessment for overseas projects?

Presently, QM assessment is available only to projects within Singapore. However, BCA does provide a limited form of architectural internal finish assessment based on CONQUAS® for overseas projects. Some foreign developers/contractors find this useful for benchmarking purposes or to add value when marketing their projects.

Do I need to maintain my QM unit?

Aging and wear and tear of materials is a normal process. To preserve and maintain the quality of the QM unit, homeowners need to perform regular checks, cleaning and servicing in accordance with the manufacturers' recommendations for maintenance. The following are some tips for proper maintenance of common materials and components:

Agglomerated marble

- Remove spillage immediately.
- Avoid using cleaning agents containing soluble salts like sulphate or chloride.
- Use neutral cleaner or plain water for regular cleaning maintenance.

Timber Flooring

- Ensure all external windows and doors are shut to prevent rain water from splashing onto the timber flooring.
- Where possible, keep internal doors and top hung windows at bathrooms open to allow better natural ventilation of units which may be left vacant for a long period of time.
- Liquid spills can be absorbed and stain wood permanently. Hence they should be cleaned immediately.

- Avoid walking on timber flooring with cleats, safety boots and other footwear that may damage the flooring.
- When moving heavy furniture or equipment, do not slide it on timber flooring. It is a good practice to lift and carry the furniture or equipment to protect the timber flooring.
- Avoid leaving stagnant water on the timber floor.

Windows

- Clean and remove dirt from movable parts such as the sliding shoes, pivot points and track as often as necessary.
- Lubricate or grease the movable parts, hinges, screws and pivot points at least once every six months.
- Check the glass panes for cracks and ensure that the panes are not loose.
- Tighten loose rivets/screws or replace missing or corroded rivets/screws.
- Replace damaged friction stays and adjust screw on sliding shoe if necessary.

B) CONQUAS® (Construction Quality Assessment System)

CONQUAS® was developed by the Building and Construction Authority in co-operation with major public sector agencies and various leading industry professional bodies to measure workmanship quality in new public and private building projects. Introduced since 1989, CONQUAS® is recognised as the national quality yardstick for the industry and has been fine-tuned periodically to keep pace with changes in technology and quality demands.

CONQUAS® measures quality of constructed building works against established workmanship standards and specification. It adopts a sampling approach in the assessment of the works. The works assessed include internal and external works.

CONQUAS® covers three main components of building works:

Structural works - this covers the structural integrity and helps to safeguard building users' safety.

Architectural works - this deals with the finishes and components of the building. This is the part where the quality and standard of workmanship are most visible.

Mechanical & Electrical works - this concerns performance of selected mechanical and electrical services and installations to ensure building users' comfort.

What is the difference between Quality Mark and CONQUAS®?

Under the QM scheme, BCA will assess all the internal finishes and waterproofing works in each unit. The unit will be issued the QM certificate if it meets the specified standard. If the unit does not meet the standard at first assessment, the developer may rectify the unit and apply for re-assessment. There is no limit to the number of re-assessments. The QM certificate will be issued only after the minimum QM score is achieved.

Under CONQUAS®, only samples are taken of the Structural, Architectural and Mechanical & Electrical (M & E) works throughout the duration of the project. The CONQUAS® score is determined based only on the initial assessments. It is based on a "first time right" principle. There is no provision for re-assessment.



PART III

DISPUTE RESOLUTION

PART III: DISPUTE RESOLUTION



There may be instances where the developer disputes your request for rectification, or there may be unresolved issues such as disagreements on defects, repairs that are not carried out satisfactorily, or lack of response to your concerns. The following processes should be considered to resolve such disputes.

- A) Consider resolving your disputes through mediation
 - An independent third party, called a mediator is appointed
 - The mediator helps to negotiate an amicable settlement of your differences
 - The mediator does not decide on dispute but help to reach a mutual agreement
- B) Consider other dispute resolution measures such as:
 - Neutral evaluation
 - Arbitration
 - Litigation

Three organisations or bodies are highlighted here for the provision of neutral evaluation and/or mediation services. A fee may be charged for these services. You are advised to check with the respective organisations/bodies to confirm the fees before engagement.

You are advised to seek independent legal advice should you wish to pursue arbitration or litigation.

For more information on resolving disputes under the Sale and Purchase Agreement, you may visit the URA web site at <http://www.ura.gov.sg>

Real Estate Developers' Association of Singapore (REDAS)

Disputes over building defects between private home purchasers and REDAS member developers can be brought before the **REDAS Conciliation Panel**.

The Panel deals with disputes concerning workmanship, quality of materials used and/or obligations under the **Sale and Purchase Agreement** which arise during the 12-month defects liability period.

Panel members comprise professionals who are familiar with the construction and property industry, including architects, surveyors, valuers, engineers and contractors as well as officials from relevant government agencies. The composition varies with the nature of the dispute.

For more information, you may visit the REDAS web site at <http://www.redas.com>

Singapore Mediation Centre (SMC)

The SMC provides mediation and neutral evaluation services. The mediation process is facilitated by mediators appointed by the SMC.

The mediators include:

- ❖ Former judges and judicial commissioners
- ❖ Lawyers
- ❖ Construction industry professionals, such as:
 - Architects
 - Engineers
 - Project managers
 - Quantity surveyors
 - Builders

The SMC will match appropriate mediators to disputes. In addition, you and your developer will each pay an administrative fee.

In neutral evaluation, you and your developer will select an evaluator from the SMC's panel of evaluators to provide an impartial written opinion on the merits of the disputes between you and your developer. The SMC's evaluators also include senior construction industry professionals such as architects, engineers, project managers, quantity surveyors and builders.

For more information, you may visit the SMC web site at <http://www.mediation.com.sg>

Consumers Association of Singapore (CASE)

CASE mediation Centre was set up in June 1999. Mediators are CASE volunteers, from a wide array of professions.

For more information, you may visit the CASE web site at <http://www.case.org.sg>

APPENDIX

REFERENCES

1. Good Industry Practices Guide Book: Ceramic Tiling (2nd Edition)
2. Good Industry Practices Guide Book: Marble & Granite Finishes (2nd Edition)
3. Good Industry Practices Guide Book: Waterproofing for Internal Wet Areas (2nd Edition)
4. Good Industry Practices Guide Book: Painting (2nd Edition)
5. Good Industry Practices Guide Book: Timber Flooring
6. Good Industry Practices Guide Book: Waterproofing for External Wall
7. Good Industry Practices Guide Book: Aluminium Window
8. Good Industry Practices Guide Book: Timber Doors
9. Good Industry Practices Guide Book: Wardrobes & Kitchen Cabinets
10. Good Industry Practices Guide Book: Precast Concrete Elements
11. Good Industry Practices Guide Book: Design & Materials Selection (Vol. 1)
12. Good Industry Practices Guide Book: Design & Materials Selection (Vol. 2)
13. BCA Buildability Series: What you need to know about Prefabricated Bathroom Unit (PBU)
14. HDB Window Maintenance Guide.